

2005 AIAA Journal Index

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J05-066 Experimental and Numerical Determination of Micropropulsion Device Efficiencies at Low Reynolds Numbers
J05-235 Analysis and Characteristics of Choked Swirling Nozzle Flows
J05-236 Three-Dimensional Normal Shock-Wave/Boundary-Layer Interaction in a Rectangular Duct

Jets, Wakes, and Viscid-Inviscid Flow Interactions

J05-149 Planar Shock Generator for Wind Tunnels with Circular Cross Section
J05-228 Vectoring of Adjacent Synthetic Jets
J05-103 Effects of Inflow Conditions and Forcing on Subsonic Jet Flows and Noise
J05-125 Turbulent Flow Downstream of a Propeller, Part 1: Wake Turbulence
J05-252 Structure of Supersonic Twin Jets
J05-179 Fine-Scale Turbulence Noise from Hot Jets
J05-188 Planar Fluorescence Imaging of a Supersonic Axisymmetric Base Flow with Mass Bleed
J05-168 Density Measurements in an Axisymmetric Underexpanded Jet by Background-Oriented Schlieren Technique

J05-165 Influence of Jet Inlet Conditions on Time-Average Behavior of Transverse Jets
J05-161 Aspects of Low- and High-Frequency Actuation for Aerodynamic Flow Control
J05-073 Virtual Origin of Incompressible and Supersonic Turbulent Bluff-Body Wakes
J05-007 Far-Field Acoustic Investigation into Chevron Nozzle Mechanisms and Trends
J05-167 Strong Baroclinic Effects in a Light Jet in a Pulsed Coflow
J05-158 Experiments and Analyses of Distributed Exhaust Nozzles
J05-104 Nozzle Shaping for Reduction of Jet Noise from Single Jets
J05-119 Comparative Study of Single-Block versus Multiblock Jet Flow Computations
J05-043 Decrease of the Effective Reynolds Number with Eddy-Viscosity Subgrid Modeling
J05-081 Axisymmetric Jet Shear-Layer Excitation Induced by Laser Energy and Electric Arc Discharges
J05-108 Large-Structure Topology in a Three-Dimensional Supersonic Base Flow
J05-283 Near Field Measurements in an Equilateral Triangular Turbulent Freejet
J05-227 Formation Criterion for Synthetic Jets
J05-261 Turbulent Characteristics of a Transverse Supersonic Jet in a Subsonic Compressible Crossflow
J05-077 Experimental Study of Incompressible Jets with Different Initial Swirl Distributions: Mean Results
J05-082 Thrust Augmentation and Vortex Ring Evolution in a Fully-Pulsed Jet
J05-253 Fluidic Oscillation Influences on V-Shaped Bluffbody Flow
J05-116 Use of Low-Dimensional Methods for Wake Flowfield Estimation from Dynamic Strain
J05-035 Penetration of a Transverse Supersonic Jet into a Subsonic Compressible Crossflow
J05-033 Reduced-Order Model for Efficient Simulation of Synthetic Jet Actuators

Multiphase Flows

J05-164 Boundary-Layer Dispersion of Near-Wall Injected Particles of Various Inertias
J05-132 Single-Cycle Performance of Idealized Liquid-Fueled Pulse Detonation Engines
J05-211 Hybrid Compressible-Incompressible Numerical Method for Transient Drop-Gas Flows
J05-189 Head-On Collision of a Planar Shock Wave with Deformable Porous Foams
J05-262 Experimental Study on Capillary Flow in a Vane-Wall Gap Geometry

Plasmadynamics and MHD

J05-205 Measurement of Flow Conductivity and Density Fluctuations in Supersonic Nonequilibrium Magnetohydrodynamic Flows
J05-175 Magnetoaerodynamic Actuator for Hypersonic Flow Control
J05-212 Temporal and Spatial Evolution of a Laser Spark in Air
J05-109 Eddy-Current-Based Momentum Transfer Method to Suppress Three-Dimensional Separation
J05-159 Aerodynamic Modification of Supersonic Flow Around Truncated Cone Using a Pulsed Electrical Discharges

Rarefied Flows

- J05-146** Capturing the Knudsen Layer in Continuum-Fluid Models of Nonequilibrium Gas Flows
J05-282 Direct Simulation Monte Carlo Simulations of Hypersonic Flows with Shock Interactions
J05-234 Application of Gas-Kinetic Scheme with Kinetic Boundary Conditions in Hypersonic Flow
J05-066 Experimental and Numerical Determination of Micropropulsion Device Efficiencies at Low Reynolds Numbers
J05-259 Kinetic Model Solution for Microscale Gas Flows
J05-129 Experimental and Numerical Study of Hypersonic Rarefied Gas Flow over Flat Plates

Reacting Flows and Combustion

- J05-284** Two-Phase Oxidizing Flow in a Volatile Removal Assembly Reactor Under Microgravity Conditions
J05-047 Nonstationary Collisional Dynamics in Determining Nitric Oxide Laser-Induced Fluorescence Spectra
J05-110 Reduced-Order Structure of Reacting Rectangular Jets
J05-132 Single-Cycle Performance of Idealized Liquid-Fueled Pulse Detonation Engines
J05-233 Direct Calculation of Wave Implosion for Detonation Initiation
J05-133 Pulsating Mode of Flame Propagation in Two-Dimensional Channels
J05-184 Microgravity Laminar Diffusion Flame in a Perpendicular Fuel and Oxidizer Stream Configuration

Separated Flows

- J05-277** Numerical Investigation of Low-Pressure Turbine Blade Separation Control
J05-292 Laser Doppler Measurements of a Highly Curved Flow
J05-131 Computational Study of a Supersonic Base Flow Using Hybrid Turbulence Methodology
J05-202 Mean-Flow-Multigrid for Implicit Reynolds-Stress-Model Computations
J05-260 Zonal-Detached-Eddy Simulation of the Flow Around a High-Lift Configuration
J05-188 Planar Fluorescence Imaging of a Supersonic Axisymmetric Base Flow with Mass Bleed
J05-176 Characterization of Steady Blowing for Flow Control in a Hump Diffuser
J05-157 Flow Around an Object Projected from a Cavity into a Supersonic Freestream
J05-067 High-Speed Digital-Particle-Image-Velocimetry Study of Vortex Breakdown
J05-161 Aspects of Low- and High-Frequency Actuation for Aerodynamic Flow Control
J05-198 Self-Sustained Oscillations past Perforated and Slotted Plates: Effect of Plate Thickness
J05-108 Large-Structure Topology in a Three-Dimensional Supersonic Base Flow
J05-109 Eddy-Current-Based Momentum Transfer Method to Suppress Three-Dimensional Separation
J05-166 Numerical Simulation of Transonic Buffet over a Supercritical Airfoil
J05-253 Fluidic Oscillation Influences on V-Shaped Bluffbody Flow

- J05-064** Effects of Numerics on Navier-Stokes Computations of Hypersonic Double-Cone Flows
J05-075 Flow Control of a Sharp-Edged Airfoil
J05-049 Correlation-Based Image Registration for Applications Using Pressure-Sensitive Paint
J05-021 Use of Vortex Generators to Control Internal Supersonic Flow Separation
J05-282 Direct Simulation Monte Carlo Simulations of Hypersonic Flows with Shock Interactions
J05-029 Modeling Pulsed-Blowing Systems for Flow Control
J05-271 Numerical Study of a Separated-Reattached Flow on a Blunt Plate
J05-054 High-Frequency Oscillating-Hot-Wire Sensor for Near-Wall Diagnostics in Separated Flows

Shock Waves and Detonations

- J05-149** Planar Shock Generator for Wind Tunnels with Circular Cross Section
J05-159 Aerodynamic Modification of Supersonic Flow Around Truncated Cone Using a Pulsed Electrical Discharges
J05-189 Head-On Collision of a Planar Shock Wave with Deformable Porous Foams
J05-213 Performance of a Shock Tube with a Large-Area Contraction
J05-062 Interaction of Plume with Shock Waves in Laser Ablation
J05-111 Accurate Spatial Resolution Estimates for Reactive Supersonic Flow with Detailed Chemistry
J05-024 Control of Edney IV Interaction by Pulsed Laser Energy Deposition
J05-034 Aerodynamic Performance of Transonic Bethe-Zal'dovich-Thompson Flows past an Airfoil
J05-061 Modeling the Effect of Shock Unsteadiness in Shock/Turbulent Boundary-Layer Interactions
J05-117 Low Diffusion Efficient Upwind Scheme

Subsonic Flow

- J05-229** Skin-Friction Reduction on Body of Revolution Using Boundary-Layer Alteration Devices
J05-073 Virtual Origin of Incompressible and Supersonic Turbulent Bluff-Body Wakes
J05-120 Experiments on Streamline-Curvature Instability in Boundary Layers on a Yawed Cylinder
J05-130 Validation Study of a Multidomain Spectral Code for Simulation of Turbulent Flows
J05-259 Kinetic Model Solution for Microscale Gas Flows
J05-083 Harmonic Balance Approach for an Airfoil with a Freeplay Control Surface
J05-097 Calibration and Data-Reduction Algorithms for Nonconventional Multihole Pressure Probes

Supersonic Flow

- J05-185** Numerical-Experimental Comparisons of Second-Mode Behavior for Blunted Cones
J05-157 Flow Around an Object Projected from a Cavity into a Supersonic Freestream
J05-190 Direct Simulation Monte Carlo Modeling of Homogenous Condensation in Supersonic Plumes
J05-177 Passive Control of Plume Interference on Slender Axisymmetric Bodies

- J05-205** Measurement of Flow Conductivity and Density Fluctuations in Supersonic Nonequilibrium Magnetohydrodynamic Flows
J05-236 Three-Dimensional Normal Shock-Wave/Boundary-Layer Interaction in a Rectangular Duct
J05-188 Planar Fluorescence Imaging of a Supersonic Axisymmetric Base Flow with Mass Bleed
J05-024 Control of Edney IV Interaction by Pulsed Laser Energy Deposition
J05-073 Virtual Origin of Incompressible and Supersonic Turbulent Bluff-Body Wakes
J05-168 Density Measurements in an Axisymmetric Underexpanded Jet by Background-Oriented Schlieren Technique
J05-081 Axisymmetric Jet Shear-Layer Excitation Induced by Laser Energy and Electric Arc Discharges
J05-118 Constant-Temperature and Constant-Voltage Anemometer Use in a Mach 2.5 Flow
J05-109 Eddy-Current-Based Momentum Transfer Method to Suppress Three-Dimensional Separation
J05-010 Temporal Linear Stability Analysis of Three-Dimensional Compressible Binary Shear Layers
J05-061 Modeling the Effect of Shock Unsteadiness in Shock/Turbulent Boundary-Layer Interactions
J05-021 Use of Vortex Generators to Control Internal Supersonic Flow Separation

Transonic Flow

- J05-235** Analysis and Characteristics of Choked Swirling Nozzle Flows
J05-094 Generalized Transonic Unsteady Aerodynamics via Computational-Fluid-Dynamics/Indicial Approach
J05-258 Large-Eddy Simulation of Transitional Boundary Layer with Impinging Shock Wave
J05-074 The Supercritical Peanut: The Navy's Pioneer in High-Speed Flight Research
J05-035 Penetration of a Transverse Supersonic Jet into a Subsonic Compressible Crossflow
J05-208 Constrained Aerodynamic Optimization of Three-Dimensional Wings Driven by Navier-Stokes Computations
J05-023 Euler Solution Using Cartesian Grid with a Gridless Least-Squares Boundary Treatment
J05-034 Aerodynamic Performance of Transonic Bethe-Zal'dovich-Thompson Flows past an Airfoil
J05-004 Nonlinear Aeroelastic Computation of a Wing/Pylon/Finned-Store Using Parallel Computing

Unsteady Flows

- J05-260** Zonal-Detached-Eddy Simulation of the Flow Around a High-Lift Configuration
J05-131 Computational Study of a Supersonic Base Flow Using Hybrid Turbulence Methodology
J05-186 Compact Difference Scheme Applied to Simulation of Low-Sweep Delta Wing Flow
J05-130 Validation Study of a Multidomain Spectral Code for Simulation of Turbulent Flows
J05-124 Turbulence Correlation Length-Scale Relationships for the Prediction of Aeroacoustic Response
J05-126 Turbulent Flow Downstream of a Propeller, Part 2: Ingested, Propeller-Modified Turbulence

J05-125 Turbulent Flow Downstream of a Propeller, Part 1: Wake Turbulence
J05-112 Luminescence Lifetime Response of Pressure-Sensitive Paint to a Pressure Transient
J05-096 Synthetic Jets in Cross-Flow
J05-128 Three-Dimensionality in Reynolds-Averaged Navier-Stokes Solutions Around Two-Dimensional Geometries
J05-232 Space-Time Mapping Analysis of Airfoil Nonlinear Interaction with Unsteady Inviscid Flow
J05-095 Chaotic Flow Generated by an Oscillating Foil
J05-094 Generalized Transonic Unsteady Aerodynamics via Computational-Fluid-Dynamics/Indicial Approach
J05-209 Numerical Simulation of Separation Control for Transitional Highly Loaded Low-Pressure Turbines
J05-167 Strong Baroclinic Effects in a Light Jet in a Pulsed Coflow
J05-123 Experimental Application of an Active Control Loop on Backward-Facing Step Flow
J05-198 Self-Sustained Oscillations past Perforated and Slotted Plates: Effect of Plate Thickness
J05-067 High-Speed Digital-Particle-Image-Velocimetry Study of Vortex Breakdown
J05-006 Cartesian Grid Method for Moderate-Reynolds-Number Flows Around Complex Moving Objects
J05-105 Investigation of Three-Dimensional Dynamic Stall Using Computational Fluid Dynamics
J05-166 Numerical Simulation of Transonic Buffet over a Supercritical Airfoil
J05-119 Comparative Study of Single-Block versus Multiblock Jet Flow Computations
J05-108 Large-Structure Topology in a Three-Dimensional Supersonic Base Flow
J05-098 Analysis and Prediction of Thin-Airfoil Stall Phenomena with Hybrid Turbulence Methodology
J05-118 Constant-Temperature and Constant-Voltage Anemometer Use in a Mach 2.5 Flow
J05-187 Experimental and Numerical Studies of Dilution Systems for Low-Emission Combustors
J05-056 Computations of Wall Distances Based on Differential Equations
J05-081 Axisymmetric Jet Shear-Layer Excitation Induced by Laser Energy and Electric Arc Discharges
J05-278 Experimental Study on Aerodynamic Characteristics of Unsteady Wings Airfoils Low Reynolds Number
J05-280 Analysis and Stabilization of Fluid-Structure Interaction Algorithm for Rigid-Body Motion
J05-272 Direct Measurement of Unsteady Fluid Dynamic Forces for a Hovering Dragonfly
J05-206 Discrete Adjoint Approach for Modeling Unsteady Aerodynamic Design Sensitivities
J05-227 Formation Criterion for Synthetic Jets
J05-261 Turbulent Characteristics of a Transverse Supersonic Jet in a Subsonic Compressible Crossflow
J05-107 Fast Fourier Transform Convergence Criterion for Numerical Simulations of Periodic Fluid Flows
J05-082 Thrust Augmentation and Vortex Ring Evolution in a Fully-Pulsed Jet
J05-063 Antialiasing Filters for Coupled Reynolds-Averaged/Large-Eddy Simulations

J05-033 Reduced-Order Model for Efficient Simulation of Synthetic Jet Actuators
J05-065 Multistage Coupling for Unsteady Flows in Turbomachinery
J05-084 Unsteady Calibration of Fast-Response Pressure Probes, Part 1: Theoretical Studies
J05-085 Unsteady Calibration of Fast-Response Pressure Probes, Part 2: Water-Tunnel Experiments
J05-086 Unsteady Calibration of Fast-Response Pressure Probes, Part 3: Air Jet Experiments
J05-027 Calculation of Airfoil Flutter by an Euler Method with Approximate Boundary Conditions
J05-036 Experimental Investigation of a Pulse Detonation Engine with a Two-Dimensional Ejector
J05-032 Numerical Investigation of Reflected Shock/Vortex Interaction near an Open-Ended Duct
J05-025 Reduced-Order Modeling of a Heaving Airfoil
J05-054 High-Frequency Oscillating-Hot-Wire Sensor for Near-Wall Diagnostics in Separated Flows
J05-013 Experiments and Modeling of an Unsteady Turbulent Channel Flow
J05-015 Outflow Conditions for Integrated Large Eddy Simulation/Reynolds-Averaged Navier-Stokes Simulations
J05-116 Use of Low-Dimensional Methods for Wake Flowfield Estimation from Dynamic Strain

Viscous Non-Boundary-Layer Flows

J05-173 Burger's Original Model of Turbulence

Vortices

J05-160 Flow Structure on Diamond and Lambda Planforms: Trailing-Edge Region
J05-186 Compact Difference Scheme Applied to Simulation of Low-Sweep Delta Wing Flow
J05-292 Laser Doppler Measurements of a Highly Curved Flow
J05-095 Chaotic Flow Generated by an Oscillating Foil
J05-151 Control of Vortical Flow over a Rounded Leading-Edge Delta Wing
J05-110 Reduced-Order Structure of Reacting Rectangular Jets
J05-067 High-Speed Digital-Particle-Image-Velocimetry Study of Vortex Breakdown
J05-105 Investigation of Three-Dimensional Dynamic Stall Using Computational Fluid Dynamics
J05-228 Vectoring of Adjacent Synthetic Jets
J05-261 Turbulent Characteristics of a Transverse Supersonic Jet in a Subsonic Compressible Crossflow
J05-075 Flow Control of a Sharp-Edged Airfoil
J05-145 Time Decay of n Family of Vortices
J05-082 Thrust Augmentation and Vortex Ring Evolution in a Fully-Pulsed Jet
J05-235 Analysis and Characteristics of Choked Swirling Nozzle Flows
J05-221 Control of Vortex Breakdown over Highly Swept Wings
J05-035 Penetration of a Transverse Supersonic Jet into a Subsonic Compressible Crossflow
J05-057 Vortex Buffeting of Aircraft Tail: Interpretation via Proper Orthogonal Decomposition
J05-077 Experimental Study of Incompressible Jets with Different Initial Swirl Distributions: Mean Results

J05-002 Accuracy of the Induced Velocity from Helicoidal Wake Vortices Using Straight-Line Segmentation
J05-032 Numerical Investigation of Reflected Shock/Vortex Interaction near an Open-Ended Duct
J05-049 Correlation-Based Image Registration for Applications Using Pressure-Sensitive Paint

Wave Motion and Sloshing

J05-262 Experimental Study on Capillary Flow in a Vane-Wall Gap Geometry

GUIDANCE, CONTROL, AND DYNAMICS TECHNOLOGY

Aircraft Guidance

J05-080 Autonomous Control of Micro Aircraft Vehicles Falling Through an Atmospheric Boundary Layer

Control System Design

J05-285 New Model Correcting Method for Quadratic Eigenvalue Problems Using a Symmetric Eigenstructure Assignment

Dynamics

J05-134 Reliability-Based Optimization of Active Nonstationary Random Vibration Control
J05-237 Alternative Formulations for Transient Dynamic Response Optimization
J05-083 Harmonic Balance Approach for an Airfoil with a Freeplay Control Surface
J05-150 Davidson Method for Eigenpairs and Their Derivatives
J05-087 Optimization of Flexible Multibody Dynamic Systems Using the Equivalent Static Load Method
J05-060 Sensitivity of Repeated Eigenvalues to Perturbations
J05-214 Forced Vibrations of Functionally Graded Plates in the Three-Dimensional Setting
J05-238 Analysis of Eigenvalues and Modal Interaction of Stochastic Systems

Optimization Techniques

J05-191 Pointwise Bias Error Bounds and Min-Max Design for Response Surface Approximations
J05-237 Alternative Formulations for Transient Dynamic Response Optimization
J05-239 Alternative Formulations for Structural Optimization: An Evaluation by Using Trusses
J05-026 Application of Simultaneous Perturbation Stochastic Approximation Method for Aerodynamic Shape Design Optimization
J05-181 Reliability Estimation and Design with Insufficient Data Based on Possibility Theory
J05-134 Reliability-Based Optimization of Active Nonstationary Random Vibration Control
J05-208 Constrained Aerodynamic Optimization of Three-Dimensional Wings Driven by Navier-Stokes Computations
J05-263 Efficient Response Surface Modeling by Using Moving Least-Squares Method and Sensitivity
J05-254 Optimization of Flapping Airfoils For Maximum Thrust and Propulsive Efficiency

State Estimation

J05-192 Real-Time Structural Damage Monitoring by Input Error Function

Structural Control

- J05-264** Nonlinear Perturbation Theory for Structural Dynamic Systems
J05-285 New Model Correcting Method for Quadratic Eigenvalue Problems Using a Symmetric Eigenstructure Assignment
J05-240 Energy Optimization in Local Shape Control of Structures with Nonlinear Piezoelectric Actuators
J05-182 Low Energy-Consumption Hybrid Vibration Suppression Based on Energy-Recycling Approach
J05-134 Reliability-Based Optimization of Active Nonstationary Random Vibration Control

System Identification

- J05-274** Aeroelastic Model Reduction for Affordable Computational Fluid Dynamics-Based Flutter Analysis
J05-156 Efficient Reduced-Order System Identification for Linear Systems with Multiple Inputs
J05-192 Real-Time Structural Damage Monitoring by Input Error Function
J05-225 Approximation of Unsteady Aerodynamic Forces $Q(k, M)$ by Use of Fuzzy Techniques

INTERDISCIPLINARY TOPICS

Analytical and Numerical Methods

- J05-156** Efficient Reduced-Order System Identification for Linear Systems with Multiple Inputs
J05-191 Pointwise Bias Error Bounds and Min-Max Design for Response Surface Approximations
J05-193 Multiscale Modeling for the Long-Term Behavior of Laminated Composite Structures
J05-069 High-Performance Domainwise Parallel Direct Solver for Large-Scale Structural Analysis
J05-112 Luminescence Lifetime Response of Pressure-Sensitive Paint to a Pressure Transient
J05-136 Extended Radial Basis Functions: More Flexible and Effective Metamodeling
J05-111 Accurate Spatial Resolution Estimates for Reactive Supersonic Flow with Detailed Chemistry
J05-165 Influence of Jet Inlet Conditions on Time-Average Behavior of Transverse Jets
J05-247 Numerical Evaluation of Optimization Algorithms for Low-Reynolds-Number Aerodynamic Shape Optimization
J05-174 Finite Element-Based Boundary Treatment in the Hybrid Particle Method
J05-083 Harmonic Balance Approach for an Airfoil with a Freeplay Control Surface
J05-068 Fuzzy Finite Element Approach for Analysis of Fiber-Reinforced Laminated Composite Beams
J05-169 Mixed-Discrete Fuzzy Multiobjective Programming for Engineering Optimization Using Hybrid Genetic Algorithm
J05-206 Discrete Adjoint Approach for Modeling Unsteady Aerodynamic Design Sensitivities
J05-246 Genetic-Algorithm Optimization of a Chemistry Mechanism for Oxidation of Liquid Hydrocarbons
J05-135 Mode Traces in Degenerate Eigensystems and Augmented Assurance
J05-016 Beam Steering and Shaping of Smart Cylindrical Antenna

- J05-088** Use of Kriging Models to Approximate Deterministic Computer Models

Atmospheric and Space Sciences

- J05-101** Key Links to Space Weather: Forecasting Solar-Generated Shocks and Proton Acceleration

Environmental Effects

- J05-226** Framework for Aircraft Conceptual Design and Environmental Performance Studies

Lasers and Laser Applications

- J05-053** Uncertainty Analysis of Laser-Doppler-Velocimetry Measurements in a Swirling Flowfield
J05-047 Nonstationary Collisional Dynamics in Determining Nitric Oxide Laser-Induced Fluorescence Spectra
J05-046 Narrow-Linewidth Ultraviolet Source for Rayleigh and Raman Applications
J05-212 Temporal and Spatial Evolution of a Laser Spark in Air
J05-147 Experimental Laser Sensing for Aircraft Vibration Suppression
J05-062 Interaction of Plume with Shock Waves in Laser Ablation
J05-052 Development of Megahertz-Rate Planar Doppler Velocimetry for High Speed Flows
J05-050 Planar Particle Imaging Doppler Velocimetry: A Three Component Velocity Measurement Technique
J05-048 Assimilation of Physical Chemistry Models for Lifetime Analysis of Pressure-Sensitive Paint

Multidisciplinary Design Optimization

- J05-239** Alternative Formulations for Structural Optimization: An Evaluation by Using Trusses
J05-226 Framework for Aircraft Conceptual Design and Environmental Performance Studies
J05-265 Hybrid Variable Fidelity Optimization by Using a Kriging-Based Scaling Function
J05-136 Extended Radial Basis Functions: More Flexible and Effective Metamodeling
J05-191 Pointwise Bias Error Bounds and Min-Max Design for Response Surface Approximations
J05-237 Alternative Formulations for Transient Dynamic Response Optimization
J05-251 Minimum-State Unsteady Aerodynamics for Aeroservoelastic Configuration Shape Optimization of Flight Vehicles
J05-137 Multiobjective Optimization Using Coupled Response Surface Model and Evolutionary Algorithm
J05-247 Numerical Evaluation of Optimization Algorithms for Low-Reynolds-Number Aerodynamic Shape Optimization
J05-089 Probabilistic Structural Optimization Under Reliability, Manufacturability, and Cost Constraints
J05-169 Mixed-Discrete Fuzzy Multiobjective Programming for Engineering Optimization Using Hybrid Genetic Algorithm
J05-215 Multidisciplinary Design Optimization of Aircraft Combustor Structure: An Industry Application
J05-180 Design of a Comfortable Rotor Airfoil Using Distributed Piezoelectric Actuators
J05-037 Efficient Finite Difference Design Sensitivities
J05-088 Use of Kriging Models to Approximate Deterministic Computer Models

Reliability, Maintainability, and Logistics Support

- J05-181** Reliability Estimation and Design with Insufficient Data Based on Possibility Theory
J05-090 Enriched Performance Measure Approach for Reliability-Based Design Optimization

Research Facilities and Instrumentation

- J05-213** Performance of a Shock Tube with a Large-Area Contraction
J05-046 Narrow-Linewidth Ultraviolet Source for Rayleigh and Raman Applications
J05-138 Compensation of Anelastic Error in Force Measurement
J05-052 Development of Megahertz-Rate Planar Doppler Velocimetry for High Speed Flows
J05-048 Assimilation of Physical Chemistry Models for Lifetime Analysis of Pressure-Sensitive Paint
J05-051 Three Dimensional Planar Doppler Velocity Measurements in a Full-Scale Rotor Wake

Sensor Systems

- J05-138** Compensation of Anelastic Error in Force Measurement
J05-266 High-Frequency Response Functions for Composite Plate Monitoring with Ultrasonic Validation
J05-054 High-Frequency Oscillating-Hot-Wire Sensor for Near-Wall Diagnostics in Separated Flows
J05-097 Calibration and Data-Reduction Algorithms for Nonconventional Multihole Pressure Probes
J05-178 Dual-Stiffness Sensor for Damage Detection, Localization, and Prognostics

LAUNCH VEHICLE AND MIS-SILE (LV/M) TECHNOLOGY

Launch Vehicle and Sounding Rocket Systems

- J05-017** Dual-Band Infrared Imagery of an Atlas 5 Launch Vehicle in Flight

Structural Design (Including Loads)

- J05-194** Toward a Probabilistic Preliminary Design Criterion for Buckling Critical Composite Shells

Testing, Flight and Ground

- J05-017** Dual-Band Infrared Imagery of an Atlas 5 Launch Vehicle in Flight

PROPULSION

Advanced Space Propulsion

- J05-066** Experimental and Numerical Determination of Micropropulsion Device Efficiencies at Low Reynolds Numbers

Airbreathing Propulsion

- J05-010** Temporal Linear Stability Analysis of Three-Dimensional Compressible Binary Shear Layers
J05-036 Experimental Investigation of a Pulse Detonation Engine with a Two-Dimensional Ejector
J05-241 Novel Two-Stage Injector for Flame Stabilization in Supersonic Flows

Combustion and Combustor Designs

- J05-267** Effect of Uniform Magnetic Field on Equilibrium Combustion Compositions: Constant Volume
- J05-022** Influence of Gravity on Combustion Synthesis of Advanced Materials
- J05-215** Multidisciplinary Design Optimization of Aircraft Combustor Structure: An Industry Application
- J05-241** Novel Two-Stage Injector for Flame Stabilization in Supersonic Flows

Combustion Instability

- J05-133** Pulsating Mode of Flame Propagation in Two-Dimensional Channels

Detonation

- J05-170** Formation and Stability of Near Chapman-Jouguet Standing Oblique Detonation Waves
- J05-132** Single-Cycle Performance of Idealized Liquid-Fueled Pulse Detonation Engines
- J05-036** Experimental Investigation of a Pulse Detonation Engine with a Two-Dimensional Ejector
- J05-233** Direct Calculation of Wave Implosion for Detonation Initiation

Droplet and Spray Characterization

- J05-211** Hybrid Compressible-Incompressible Numerical Method for Transient Drop-Gas Flows

Emissions and Noises

- J05-008** Ninety-Degree Acoustic Spectrum of a High Speed Air Jet
- J05-158** Experiments and Analyses of Distributed Exhaust Nozzles
- J05-104** Nozzle Shaping for Reduction of Jet Noise from Single Jets

Gas Turbine Engines

- J05-038** Minimizing Blade Dynamic Response in a Bladed Disk Through Design Optimization
- J05-187** Experimental and Numerical Studies of Dilution Systems for Low-Emission Combustors
- J05-053** Uncertainty Analysis of Laser-Doppler-Velocimetry Measurements in a Swirling Flowfield

Hypersonic Propulsion

- J05-170** Formation and Stability of Near Chapman-Jouguet Standing Oblique Detonation Waves

Ignition

- J05-241** Novel Two-Stage Injector for Flame Stabilization in Supersonic Flows
- J05-287** Thermal-Runaway Approximation for Ignition Times of Branched-Chain Explosions

Supersonic Combustion

- J05-111** Accurate Spatial Resolution Estimates for Reactive Supersonic Flow with Detailed Chemistry

Transient Combustion

- J05-133** Pulsating Mode of Flame Propagation in Two-Dimensional Channels

Turbomachinery

- J05-209** Numerical Simulation of Separation Control for Transitional Highly Loaded Low-Pressure Turbines
- J05-231** Evaluation of Near-Wall Turbulence Models for Deliberately Roughened Liquid Annular Seals
- J05-137** Multiobjective Optimization Using Coupled Response Surface Model and Evolutionary Algorithm
- J05-065** Multistage Coupling for Unsteady Flows in Turbomachinery
- J05-011** Acoustic Propagation on Irrotational Mean Flows Using Transient Finite and Infinite Elements

SPACE TECHNOLOGY**Space Processing**

- J05-022** Influence of Gravity on Combustion Synthesis of Advanced Materials
- J05-262** Experimental Study on Capillary Flow in a Vane-Wall Gap Geometry

Spacecraft Radiation Protection

- J05-101** Key Links to Space Weather: Forecasting Solar-Generated Shocks and Proton Acceleration

STRUCTURAL MECHANICS AND MATERIALS**Aeroelasticity and Control**

- J05-273** Computation of Actuation Power Requirements for Smart Wings with Morphing Airfoils
- J05-222** Feedback Linearization Control for Panel Flutter Suppression with Piezoelectric Actuators
- J05-216** Flutter and Thermal Deflection Suppression of Composite Plates Using Shape Memory Alloy
- J05-058** Reduced-Order-Model Approach for Aeroelastic Analysis Involving Aerodynamic and Structural Nonlinearities
- J05-276** Modeling of Aeroservoelastic Systems with Structural and Aerodynamic Variations
- J05-275** Identifying Parameter-Dependent Volterra Kernels to Predict Aeroelastic Instabilities
- J05-155** Influence of Joint Relaxation on Deterministic and Stochastic Panel Flutter
- J05-004** Nonlinear Aeroelastic Computation of a Wing/Pylon/Finned-Store Using Parallel Computing
- J05-070** Active Control of Nonlinear Panel Flutter Under Yawed Supersonic Flow

Dynamic Model Analysis

- J05-242** Parallel Multispecies Genetic Algorithm for Physics and Parameter Estimation in Structural Dynamics
- J05-238** Analysis of Eigenvalues and Modal Interaction of Stochastic Systems
- J05-039** Direct Least-Squares Formulation of a Stiffness Adjustment Method
- J05-264** Nonlinear Perturbation Theory for Structural Dynamic Systems
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